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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,648

07/11/2006

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EXAMINER

REDDY, KARUNA P

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,648	Applicant(s) SASAKI ET AL.	
	Examiner KARUNA P. REDDY	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 9 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/7/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to amendment filed 5/7/2008. Claims 2-3, and 5-8 are cancelled; and claims 1, 4 and 9 are amended. Claims 1, 4 and 9 are currently pending in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (US 4, 986, 648) in view of Koike (US 5, 767, 200).

Kobayashi et al disclose preparation of norbornyl (meth)acrylate by esterification of norborneol with (meth)acrylic chloride or an ester exchange reaction with methyl (meth)acrylates (column 4, lines 57-66) and an optical resin material comprising a polymer containing as an essential component at least one norbornyl acrylate or methacrylate (abstract).

Kobayashi et al is silent with respect to deuteration of norbornyl (meth)acrylate; and process of making deuterated norbornyl (meth)acrylate.

However, Koike et al teach that optical absorbance attributable to expansion and contraction of the C-H bond interferes with absorbance peak wavelength in some cases and coincides with the operating wavelength of an optical device. The 4th, 5th, 6th and 7th harmonics with an absorbance at 901 nm, 736 nm, 627 nm and 549 nm respectively fall

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within the wavelength region which is mainly used in the optical communication field.

Where the C-H bond of molecules is replaced by C-D bond, the above-mentioned peaks disappear. The threshold transmission loss values are drastically improved compared with the case of C-H bond (column 11, lines 14-61). Therefore, it would have been obvious to one skilled in the art at the time invention was made to replace the hydrogen atoms of C-H bond, in norbornyl (meth)acrylate of Kobayashi et al, with deuterium i.e. heavy hydrogen for forming optical members with desirable transparency or transmittancy in the operating wavelength of an optical device.

With respect to the process of deuterating norbornyl (meth)acrylate, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) and *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Allowable Subject Matter

4. Claims 4 and 9 are allowed for the following reasons -

It is noted that the present claims 4 and 9 are amended to recite a specific process involving deuteration under an atmosphere of light hydrogen gas. The closest prior art, viz., Sakunaga et al (US 4,732,716), Kobayashi et al (US 4, 986, 648), Koike

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(US 5, 767, 200), Kato et al (US 4, 874, 890), taken individually or in combination, does not disclose or suggest deuteration of norborneol or norbornanone, by reacting with heavy water, in the presence of palladium catalyst, under an atmosphere of hydrogen gas. Thus, Koike et al teach optical resin material wherein it is desirable to have high transparency i.e. transmittancy in the operating wavelength of an optical device which can be accomplished by deuteration, Kobayashi et al teach esterification of norborneol with (meth)acrylic chloride or an ester exchange reaction with methyl (meth)acrylates, Sakunaga et al disclose copolymer of methyl methacrylate and norbornyl methacrylate and the deuteration products of these polymers, and Kato et al teach deuteration of methyl methacrylate in the presence of Pd catalyst using heavy water i.e. deuterium oxide as a source of deuterium sans hydrogen gas.

Furthermore, while the reference of Hirota et al (US 2005/0177015) teach deuteration using non-activated Pd carbon in the presence of hydrogen gas and deuterium oxide i.e. heavy water (paragraph 0027-0028 and 0031); and Ito et al (US 2006/0116535) teach deuteration in the presence of deuterium oxide and palladium carbon under an atmosphere of hydrogen gas (example 1), dates are not valid for a proper rejection under 35 U.S.C. § 102.

Response to Arguments

5. Applicant's arguments, filed 5/7/2008, with respect to rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (US 4, 986, 648) in view of Koike (US 5, 767,200), have been considered but are moot in view of the amendments,

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and further in view of new grounds of rejection for claim 1, and indication of allowable subject matter for claims 4 and 9.

6. Rejection of claims 5-8 under 35 U.S.C. 103(a) as being unpatentable over Sakunaga et al (US 4, 732, 716) is withdrawn in view of the cancellation of these claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karuna P Reddy/
Examiner, Art Unit 1796

/VASUDEVAN S. JAGANNATHAN/
Supervisory Patent Examiner, Art Unit 1796